

WHAT IS CLAIMED:

1. A curable powder coating composition comprising:
- a. a polymer containing reactive functional groups;
  - b. a curing agent having functional groups reactive with the functional groups of the polymer which is present in an amount sufficient to cure the polymer; and
  - c. a phenolic compound having substituted groups on the two groups adjacent to the hydroxy group on the aromatic ring.
2. The powder coating composition of claim 1 wherein the substituted groups are alkyl groups or branched alkyl groups.
3. The powder coating composition of claim 2 wherein the alkyl group contains from 1 to 18 carbon atoms.
4. The powder coating composition of claim 1 wherein said phenolic compound is 2,6 di-tert-butyl-4-methyl-phenol.
5. The powder coating composition of claim 1 wherein said polymer containing reactive functional groups is selected from the group consisting of acrylic polymers, polyester polymers, and polyurethane polymers.
6. The powder coating composition of claim 1 wherein said polymer has a number average molecular weight of from 1,000 to 20,000.
7. The powder coating composition of claim 1 wherein said polymer has an equivalent weight equal from 200 to 2,500.

8. The powder coating composition of claim 1 wherein said reactive functional groups are carboxylic acid groups and the curing agent is a beta-hydroxyalkylamide.

5 ~~9.~~ The powder coating composition of claim 8 wherein the beta-hydroxyalkylamide is bis-hydroxyethylamide.

10 ~~10.~~ The powder coating composition of claim 1 wherein said reactive functional groups are carboxylic acid groups and the curing agent is a polyepoxide.

~~11.~~ The powder coating composition of claim 10 wherein said curing agent is triglycidylisocyanurate.

15 ~~12.~~ The powder coating composition of claim 1 wherein said phenolic compound is present in an amount ranging from 0.5 to 10 weight percent based on the total weight resin solids in the powder coating composition.

20 ~~13.~~ The powder coating composition of claim 1 wherein said polymer is present in an amount ranging from 10 to 80 weight percent based on the total weight resin solids in the powder coating composition.

25 ~~14.~~ The powder coating composition of claim 1 wherein said curing is present in an amount ranging from 2 to 40 weight percent based on the total weight resin solids in the powder coating composition.

~~15.~~ The powder coating composition of claim 1 where said polymer is an acrylic polymer containing carboxylic acid functionality.

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16. A curable powder coating composition comprising:  
a. an acrylic polymer containing carboxylic acid functional groups;

5 b. a beta-hydroxyalkylamide curing agent; and  
c. 2,6 di-tert-butyl-4-methyl-phenol.

17. A curable powder coating composition comprising:  
a. from 5 to 60 weight percent of an acrylic polymer containing carboxylic acid functional groups;  
10 b. from 0.5 to 10 percent by weight of a beta-hydroxyalkylamide curing agent and  
c. from 2 to 40 weight percent of 2,6 di-tert-butyl-4-methyl-phenol, wherein the percent by weight is based on total resin solids weight of the powder coating composition.

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18. A coated aluminum substrate containing a cured coating comprising:

a. a polymer containing reactive functional groups;  
b. a curing agent having functional groups reactive with the  
20 functional groups of the polymer which is present in an amount sufficient to cure the polymer; and  
c. a phenolic compound having substituted groups on the two groups adjacent to the hydroxy group on the aromatic ring.